REMARKS

This Amendment is filed in response to the Office Action dated Jan. 28, 2009. The Applicant respectfully requests reconsideration. All rejections are respectfully traversed.

Claims 9-16 and 21-32 are pending in this Application.

Claims 9, 21 and 29 have been amended.

No claims have been added.

Claim Rejections - 35 U.S.C. §101

At paragraphs 2-3 of the Office Action, claim 9-16 and 21-32 were rejected under 35 U.S.C. §101. Specifically, the Office Action suggests that the claims may be interpreted as software per se.

Amended claims 9, 21, and 29 now recite "a packet buffer" that contains the one or more queues. A packet buffer is understood to those of skill in the art to be a hardware device, for example, a reduced-latency DRAM (RLDRAM) or other memory, and not merely software. *See also* specification page 3, lines 8-10 and page 8, lines 12-14. Accordingly, the Applicant respectfully urges the claims may not fairly be interpreted as software per se.

Claim Rejections - 35 U.S.C. §103

At paragraphs 4-11 of the Office Action, claims 9-16 and 21-32 were rejected under 35 U.S.C. §103(a) over Deforche, U.S. Publication No. 2004/0258072 (hereinafter "Deforche") in view of Acharya, U.S. Patent No. 7,110,359 (hereinafter "Acharya"), in further view of Homberg et al., U.S. Patent No. 6,661,802 (hereinafter "Homberg").

Claims 9-16, 21-26 and 28-31:

The Applicant's claim 21, representative in part also of claims 10-16 and 21-26 and 28-31, sets forth (emphasis added):

21. A method for improving utilization of a data link coupled to a network comprising:

holding data in one or more queues coupled to a queue manager, the one or more queues associated with an excess rate component;

generating scores for the one or more of the queues, the scores to represent ratings of eligibility to transfer data in accordance with the excess rate component;

maintaining a scorecard of the generated scores;

determining that a data link is idle; and

dequeuing, by the queue manager, data from a queue associated with a highest score in the scorecard, and transferring the data onto the data link, in response to determining that the data link has become idle.

Deforche discusses techniques for "enqueuing incoming data packets in sessions, and for storing the sessions in sequential order in service-groups." *See* Deforche abstract. "A session is defined as a flow of packets that require a particular service… The scheduler 1 maintains per-session queues s_1 … s_n in which these packets are queued." *See* paragraph 0067. "Only the head-of-session packets are considered by the scheduler 1." *See* paragraph 0067. "Each data packet may have a priority value for selection…" that affects whether or not the packet is selected for transmission. *See* paragraphs 0026 and 0041.

Acharya discusses a technique in which there are a plurality of output priority queues and "each output priority queue 310-316 may be associated with a different priority. For example, output priority queue 310 may store information having a priority '1' (i.e., a lowest priority indication), output priority queue 312 may store information having a priority '2' (i.e., a higher priority indication)…," etc. *See* Acharya page 6, line 49 to page 7, line 4.

Homberg discusses techniques for congestion management. Queues are organized into a queue list. *See* col. 2, line 12. "[Q]ueues in the queue list are organized by relative priority, such that the queue list may be traversed, from the highest priority queue to the lowest priority queue." *See* col. 2, lines 24-27. Frames are dequeued from the highest relative priority queue in the queue list. Each queue "is associated with a high water

8

mark and a low water mark. The high water mark indicates a length at which the queue is considered congested. The low water mark is a length at which a congested queue is considered no longer congested." *See* col. 2, lines 14-17.

In separate discussion, Homberg mentions that virtual connections may be allocated guaranteed bandwidth in accord with a Confirmed Information Rate (CIR) and/or available bandwidth in accord with an Excess Information Rate (EIR). *See* col. 1, lines 52-61.

The Applicant respectfully urges that Deforche, Acharya and Homberg are all silent concerning the Applicant's claimed "***generating scores for the one or more of the queues, the scores to represent ratings of eligibility to transfer data in accordance with the excess rate component***."

While the Applicant generates **a score** for a queue **that represents eligibility to transfer data in accordance with an excess rate component**, Deforche's "priority value", Acharya's "priority" and Homberg's "relative priority" and "water marks" all represent different information, unrelated to eligibility to use an excess rate component.

Prior techniques that have not fully taken advantage of data links that have suddenly become idle (e.g. have excess capacity). Even queues associated with excess rate components (EIRs) have often been unable to take advantage of the sudden excess capacity, as scheduling decisions typically have been made before such excess capacity becomes available. When a data link suddenly becomes idle, it is often unclear which queue, if any, should use the data link.

The Applicant's novel techniques, in part, overcome these shortcomings, by "generating scores for the one or more of the queues, the scores to represent ratings of eligibility to transfer data in accordance with the excess rate component."

Deforche's "priority value" is not **a score that represents eligibility to transfer data in accordance with an excess rate component**. Deforche's "priority value" is a property of a packet, not a queue. *See* Deforche paragraphs 0067, 0026 and 0041.

Likewise, Acharya "priority" is not **a score that represents eligibility to transfer data in accordance with an excess rate component**. Acharya "priority" is simply a general weight accord a queue for normal use. *See* page 6, line 49 to page 7, line 4. Such "priority" does not indicate a queue is eligible to use an excess rate component, nor does it provide a measure of how eligible an eligible queue may be.

Finally, Homberg's "relative priority" and "water marks" are not **scores that represent eligibility to transfer data in accordance with an excess rate component**, and thus further combination with Homberg does not remedy the deficiencies of Deforche and Acharya. Homberg's "relative priority" is simply a relative order of queues in a queue list. As such, Homberg's "relative priority" may not fairly be interpreted as a score. Further, Homberg's "relative priority" does not indicate a queue is eligible to use an excess rate component, nor provide a measure of how eligible an eligible queue may be to use an excess rate component. Homberg's discussion of an EIR at col. 1, lines 52-61 is separate from Homberg's discussion of a "relative priority" and not a description of the relative priority's purpose.

Similarly, Homberg's "water marks" are also dissimilar from the claimed **score that represents eligibility to transfer data in accordance with an excess rate component.** Homberg's "high water mark" simply indicates a length at which a queue is considered congested, while his "low water mark" simply indicates a length at which a congested queue is considered no longer congested. *See* Homberg col. 2, lines 14-17. Neither "water mark" indicates a queue is eligible to use an excess rate component, nor provides a measure of how eligible an eligible queue may be to use an excess rate component.

Accordingly, the Applicant respectfully urges that the combination of Deforche, Acharya and Homberg is legally insufficient to make obvious the present claims under 35 U.S.C. §103 because of the absence of the Applicant's claimed novel "***generating scores for the one or more of the queues, the scores to represent ratings of eligibility to transfer data in accordance with the excess rate component.***"

10

Claims 27 and 32:

The Applicant's claim 27, representative also of claim 32, sets forth (emphasis added):

> 27. The method as defined in claim 21 further comprising:
> *determining the scorecard is full*;
> in response to the scorecard being full, *determining if a generated score is greater than a score contained in the scorecard*; and
> *if so, replacing a lowest score in the scorecard with the generated score*.

The Applicant respectfully urges that Deforche, Acharya and Homberg are all silent concerning the Applicant's claimed *"determining the scorecard is full"* and *"determining if a generated score is greater than a score contained in the scorecard"* and *"if so, replacing a lowest score in the scorecard with the generated score."*

The Applicant respectfully notes that the Office Action does not specifically address the limitations of claim 27, simply referring back to the rejection of claim 9. Yet claim 27 includes additional limitations not present in claim 9, and which are not suggested in any of the references.

While the Applicant **determines a scorecard is full, determines if the generated score is greater than a score contained in the scorecard, and if so, replaces a lowest score in the scorecard with the generated score**, Doforche does not even mention a scorecard of the generated scores. There appears to be agreement on this point. *See* Office Action paragraph 7 (stating "Doforche does not specifically disclose maintaining a scorecard of generated scores"). Absent disclosure of a scorecard, Doforche may not fairly be interpreted as teaching determining a scorecard is full, or replacing a lowest score in a scorecard in response to various determinations.

Further, Acharya does not suggest *"determining the scorecard is full"* and *"determining if a generated score is greater than a score contained in the scorecard"* and *"if so, replacing a lowest score in the scorecard with the generated score."* At para-

graph 0007, the Office Action points to col. 5, lines 49 to col. 7, line 4 of Deforche in relation to the claimed "scorecard of the generated scores". Such portion of Deforche discusses priority queues having priorities/weights and "one or more devices capable of storing a weight indication **for each** of the output priority queues." Yet even if what Deforche describes is considered akin to a scorecard (an interpretation the Applicant traverses), what is claimed in claim 27 is clearly not disclosed. If anything, the description in Deforche is in conflict with what is claimed in claim 27.

Specifically, Deforche stores weights **for each** of his output priority queues. The concept of a scorecard having limited space and being **full** is entirely absent from Deforche. Further, no techniques for **replacing** scores in a scorecard are suggested in Deforche. Deforche simply has an entry for each of his queues.

Finally, Homberg also does not suggest *"determining the scorecard is full"* and *"determining if a generated score is greater than a score contained in the scorecard"* and *"if so, replacing a lowest score in the scorecard with the generated score."* Indeed, like Doforche, Homberg does not even mention a scorecard of the generated scores, much less suggest determining a scorecard is full, or replacing a lowest score in a scorecard in response to various determinations.

Accordingly, the Applicant respectfully requests that the rejection of claims 27 and 32 under 35 U.S.C. § 103 be reconsidered.

Should the Examiner believe telephonic contact would be helpful in the disposition of this Application, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

In summary, all the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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